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10/064,302

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Matthew J. Breitwisch

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EXAMINER

AUDUONG, GENE NGHIA

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 10/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/064,302 | Applicant(s) BREITWISCH ET AL. | |
| | Examiner Gene N Auduong | Art Unit 2818 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. The amendments filed on July 29, 2003 have been entered and made of record.
2. Claim 5 has been canceled.

Response to Arguments

3. Applicant's arguments with respect to claims 1-4 and 6-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1-2, 6-8 and 12-18 are rejected under 35 U.S.C. 102(a) as being anticipated by Churchill (U.S. Pat. No. 6,392,941).

Regarding claims 1-2, and 8, Churchill discloses an apparatus for tress testing memory device comprising: an array of cells (figure 1, memory device 112); and conductive lines connecting the cells together (figure 1, bitlines 120, 122, wordlines 124, 126), wherein the conductive lines connect the cells together as if they were a single cell (figure 1, all of the conductive lines (bit lines, word lines and other lines in the memory device) are connected together by a single test conductive line 102, as a single memory cell; col. 2, lines 29+), wherein the array of cells comprises a plurality of memory cells, word lines, bit lines, voltage lines, and ground lines, and wherein the conductive lines: join all word lines within the array as a single word line (a common word line); join all bit lines within the array as a single bit line (a common

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bit line); join all voltage lines within the array as a single voltage line (common voltage line); join all ground lines (Vss lines) within the array as a single ground line (figure 1, all of the word lines 124, 126, bit lines 120, 122, voltage lines Vcc, ground lines Vss join together as a single line (common line) by the word line select 142, column select 140 then connected to the test conductive line 102; col. 1, lines 60+; col. 3, lines 15+).

Regarding claims 6-7 and 12-13, Churchill discloses the apparatus for tress testing memory device in claim 1, wherein applying a voltage to one conductive line of the conductive lines charges all elements connected to the conductive line within the array; wherein measuring a current on one conductive line of the conductive lines measures an average current on all elements connected to the conductive line within the array (figure 1, applying a test voltage to test conductive line 102, charging all of the elements that connected to within the array and the process of tress testing the conductive lines in the memory device is to apply current on to the conductive lines to determine the average breakdown current for the conductive lines in the device).

Regarding claims 14-18, the apparatus as previously discussed in claims 1-2, 6-7, 8-10 and 12-13 would be performed the method as claimed. Therefore, they are analyzed as previously discussed with respect to apparatus claims 1-2, 6-7, 8-10 and 12-13.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 3-4 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Churchill (U.S. Pat. No. 6,392,941) in view of Farnworth et al. (U.S. Pat. No. 5,994,915).

Regarding claim 3, Churchill discloses the apparatus for stress testing the memory device comprising all of the limitation in claim 1. Churchill does not explicitly disclose wherein each of the conductive lines includes an individual test pad, wherein by connecting to each the test pad, the array can be tested for current leakage as if the array were an individual cell; at least one of: a word line contact pad connected to the common word line; a bit line contact pad connected to the common bit line; a bit line complement contact pad connected to the common bit line complement line; a voltage contact pad connected to the common N-well voltage line; an interior ground contact pad connected to the common interior ground line; an interior voltage contact pad connected to the common interior voltage line; and a ground line contact pad connected to the common ground line.

Farnworth et al. disclose a reduced terminal testing system comprising probe pad for connecting the conductive paths (conductive traces) in the device together as a single pad so that the testing process can be speed up and simple due to reduced in terminal and saving space for other usage in the device. Therefore, it would been obvious to one of ordinary skill in the art at the time the invention was made to modify Churchill's device to include the limitation as claimed wherein each of the conductive lines includes an individual test pad, wherein by connecting to each the test pad, the array can be tested for current leakage as if the array were an individual cell; at least one of: a word line contact pad connected to the common word line; a bit line contact pad connected to the common bit line; a bit line complement contact pad connected to the common bit line complement line; a voltage contact pad connected to the common N-well

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voltage line; an interior ground contact pad connected to the common interior ground line; an interior voltage contact pad connected to the common interior voltage line; and a ground line contact pad connected to the common ground line so that the testing process can be speed up and simple due to reduced in terminal and saving space for other usage in the device.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gene N Auduong whose telephone number is (703) 305-1343.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (703) 308-4910. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

GA
September 30, 2003



Gene N Auduong
Primary Examiner
Art Unit 2818